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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,173	04/16/2004	Kanji Kirmoto	SIC-04-021	9874
29863 7590 12/22/2006 DELAND LAW OFFICE P.O. BOX 69 KLAMATH RIVER, CA 96050-0069			EXAMINER WILLIAMS, THOMAS J	
			ART UNIT	PAPER NUMBER
			3683	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		12/22/2006	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/826,173

Applicant(s)

KIRMOTO ET AL.

Examiner

Thomas J. Williams

Art Unit

3683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-61,63-65 and 67-71 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-36,61,63-65,67 and 68 is/are allowed.
- 6) ☒ Claim(s) 37-60 and 69-71 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. Acknowledgment is made in the receipt of the November 30, 2006.

Reissue Applications

2. Claims 37-60 and 69-71 are rejected under 35 U.S.C. 251 as being improperly broadened in a reissue application made and sworn to by the assignee and not the patentee. A claim is broader in scope than the original claims if it contains within its scope any conceivable product or process which would have infringed the original patent. A claim is broadened if it is broader in any one respect even though it may be narrower in other respects.

Claim 37 omits limitations pertaining to the interior of the actuating mechanism, specifically “an input cam movably mounted within the caliper housing to move in a rotational direction about a longitudinal axis, but not in an axial direction, said input cam having a first camming surface with an axially extending guide member non-movably fixed thereto at said longitudinal axis, and an output cam movably mounted within said caliper housing to move in the axial direction in response to rotation of said input cam, but not in the rotational direction, said output cam having a second camming surface with an axially extending bore, said guide member being at least partially disposed within said bore to ensure smooth relative movement between said input and output cams”, added during prosecution of 09/531,570 (US 6,557,671) in the amendment dated November 8, 2002 to overcome the outstanding rejection in view of Kawaguchi (US 3,789,959).

The above limitations have been replaced with new limitations directed to an exterior portion of the actuating arm, specifically “wherein the actuated mechanism comprises an elongated actuating arm rotatably coupled to the caliper housing to cause

Art Unit: 3683

the actuated mechanism to move the first friction member from the release position towards the braking position; and wherein the actuating arm has a curved surface with a first portion coincident with a cable clamp and a second portion that extends from the first portion towards the cable support so that the cable, when coupled to the cable clamp, approaches the guide surface from the opening in the cable support essentially tangent to the guide surface and is supported by the guide surface when the first friction member is in the release position”.

The omitted limitations relate to previously surrendered subject matter and are directed to the input cam and the output cam and the specifics thereof, whereas the replacement limitations are directed to the actuating arm. The replacement limitations are not related to the omitted limitations, therefore a recapture rejection exists.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

Art Unit: 3683

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 37-45, 47-53 and 69-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,647,475 to Le Deit et al. in view of US 4,582,177 to Carre et al. and in view of US 6,148,964 to Huang.

Re-claims 37-40 and 54, Le Deit et al. teach a cable disc brake capable for use on a bicycle, comprising: a caliper housing 12, a cable support 44, a first friction member 20a and a second friction member 20b; an actuating mechanism 10 that moves the first friction member towards the second friction member for engaging a rotor 11; the actuating mechanism comprises an elongated actuation arm 32 coupled to the caliper housing to cause the mechanism to move the first friction member from the release position to the braking position. However, Le Deit et al. fail to teach the actuating arm having the specific structure as recited in claim 37, in particular the curved guide surface, and Le Deit et al. fail to teach a mounting bracket on a bicycle for supporting the brake assembly.

Carre et al. teach a cable actuated disc brake having an actuating arm with a curved guide surface with a first portion coincident with a cable clamp 58 and a second portion that extends from the first portion to a cable support, such that when the cable is coupled to the actuation arm, the cable approaches the guide surface from the cable support (in particular the support taught by Le Deit et al.) essentially in a straight line and essentially tangent to the guide surface and is supported by the guide surface when the friction member is in the release position. Furthermore, Carre et al. teach that the curved guide surface formation of the actuation arm provides for an increase in torque exerted during rotation, see column 4 lines 61-64. It would have been obvious

Art Unit: 3683

to one of ordinary skill in the art to have replaced the actuating arm of Le Deit et al. with the actuating arm taught by Carre et al., thus improving the overall brake performance of the cable actuated brake mechanism. With regards to claims 38-40, the guide surface is formed by a projection that extends towards the cable support (see figure 6); a radially outer portion extends towards the cable support, a radially inner portion extends away from the cable support, the radially inner portion is illustrated as a slight inwardly slanted surface; the projection is disposed in close proximity to a radially outermost portion of the arm.

Huang teaches a common mounting bracket 4 structured as part of a bicycle for receiving and holding in place a mechanical disc brake assembly. It would have been obvious to one of ordinary skill in the art when having utilized the disc brake assembly of Le Deit et al. on a bicycle to have provided the bicycle with some sort of mounting bracket as taught by Huang, thus providing an easy means by which to mount the brake assembly to the bicycle.

Re-claims 41 and 42, see spring around the cable in figure 2.

Re-claims 43-45, see bolt 60, arm 44 is capable of being rotated relative to the caliper housing thus adjusting the biasing force of the spring.

Re-claim 47, see bolt 60.

Re-claims 48 and 49, see column 2 lines 37-40.

Re-claims 50-53, Le Deit et al. as modified by Carre et al. fail to teach the specifics of the disc brake when mounted to a front fork of a bicycle. Huang teaches a typical manner by which to mount a mechanical disc brake to a front fork of a bicycle. The caliper housing includes a first mounting flange with a first opening 317, a second mounting flange with a second opening 317, the first opening is above a rotational axis, the second opening is below the rotational axis, the

Art Unit: 3683

cable support is disposed about the rotational axis, the guide surface (as taught in Carre et al.) would be rearwardly of the rotational axis, and the cable support is rearwardly of the rotational axis. It would have been obvious to one of ordinary skill to have utilized the teachings of Huang when having mounted the brake apparatus of Le Deit et al. as modified by Carre et al., on a front fork of a bicycle, thus utilizing the front fork as a means of protecting the brake assembly from frontal impact.

Re-claim 69, the cable support 44 is immobilized (see column 3 lines 39-43) with respect to the caliper housing 12 and as such is broadly interpreted as being one with the caliper housing.

Re-claim 70, the cable support comprises an elongated member.

Re-claim 71, once the support member is immobilized with respect to the housing the elongated member, that forms the opening, is immovable relative to the surface of the caliper housing.

6. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Le Deit et al. in view of Carre et al. and Huang as applied to claim 44 above, and further in view of US 5,201,402 to Mott.

Le Deit et al. fail to teach readjusting the biasing force of the spring by coupling the second end of the spring at various positions. Mott teaches the use of a plurality of holes for receiving an end of a torsion spring. The various positions of the holes offer different biasing forces. It would have been obvious to one of ordinary skill in the art to have provided the caliper housing, and even the actuating arm of Le Deit et al. with a plurality of holes for receiving an end of the torsion spring as taught by Mott, this would have provided an easy means by which to vary the biasing force of the spring.

Art Unit: 3683

7. Claims 55-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Deit et al. in view of Carre et al. and Huang as applied to claim 37 above, and further in view of US 5,960,914 to Isai.

Re-claims 55, 56, 58 and 59, Le Deit et al. as modified by Carre et al. and Huang fail to teach a torsion spring. Isai teaches a torsion spring 131 used for biasing the actuating arm back to a non-actuated position or rest position. The torsion spring is positioned between the caliper and the actuating arm, with a first end adjustably connected to the caliper and a second end directly connected to the actuating arm. It would have been obvious to one of ordinary skill in the art to have provided the brake apparatus of Le Deit et al. with a return biasing member such as a torsion spring as taught by Isai, thus providing an inexpensive means by which to effectively release the brake. The torsion spring of Isai would have eliminated the need for spring surrounding the cable in Le Deit et al., each is considered functionally equivalent.

Re-claim 57, the torsion spring as taught by Isai is interpreted as being adjustably coupled to the caliper housing and the arm, since during assembly the torsion spring would experience some adjustment.

8. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Le Deit et al. as modified by Carre et al., Huang and Isai as applied to claim 58 above, and further in view of Mott.

Le Deit et al. as modified fails to teach a plurality of holes for receiving the torsion spring, wherein the holes allow for adjustment of the torsion spring. Mott teaches the use of a plurality of holes for receiving an end of a torsion spring. The various positions of the holes offer different biasing forces. It would have been obvious to one of ordinary skill in the art to

Art Unit: 3683

have provided the caliper housing, and even the actuating arm of Le Deit et al. with a plurality of holes for receiving an end of the torsion spring as taught by Mott, this would have provided an easy means by which to vary the biasing force of the spring.

Allowable Subject Matter

9. Claims 1-36, 61, 63, 64, 65, 67 and 68 are allowed.

Response to Arguments

10. Applicant's arguments filed November 30, 2006 have been fully considered but they are not persuasive. As best understood by the examiner the characterization set forth by the applicant regarding Clement is incorrect. During prosecution of application 09/531,570 the applicant submitted on November 8, 2002 an amendment to the claims. In particular the amendment of claim 1 recited an input cam movably mounted within said caliper housing to move in a rotational direction about a longitudinal axis, and an output cam movably mounted within said caliper housing to move in the axial direction, as such this subject matter was relied upon to define over the prior art of record. These limitations have now been omitted in the instant application and replaced with another limitation that is *not related* to the subject matter submitted November 8, 2002. The new limitation is directed to an elongated actuating arm rotatably coupled to the caliper housing. The courts have ruled that recapture exists if the omitted limitation is replaced by another limitation that is *not related* to the subject matter previously surrendered by the applicant, even though the replacement limitation is a narrowing limitation, and even where the replacement limitation defines the claim over the prior art, see *Clement*, 131 F.3d at 1470, 45 USPQ2d at 1165 and reaffirmed in *Pannu v. Storz Instruments*

Art Unit: 3683

Inc., 258 F.3d 1366, 59 USPQ2d 1597 (Fed. Cir. 2001). The remarks regarding *Meyers* have been carefully considered by the examiner, but cannot be relied upon for patentability.

Conclusion

11. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Thomas Williams whose telephone number is 571-272-7128. The examiner can normally be reached on Wednesday-Friday from 6:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James McClellan, can be reached at 571-272-6786. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-6584.

TJW

December 20, 2006

**THOMAS J. WILLIAMS
PRIMARY EXAMINER**

Thomas Williams
AU 3683
12-20-06